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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,605	11/13/2003	Manasi Deval	5038-337	2516

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EXAMINER	
PARK, JUNG H	

ART UNIT	PAPER NUMBER
2616	

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06/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/713,605	DEVAL ET AL.	
	Examiner	Art Unit	
	Jung Park	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-30 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-30 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification Objections

1. The disclosure is objected to because of the following informalities:

It is required to update related application serial numbers and remove the Attorney Docket No. in the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 16 and 22 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. In claim 16, line 4 and claim 22, line 4, what is mean by "a central registration point." In the light of the specification one cannot determine the meaning of such a point.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erami et al. (US 2003/0189920, "Erami") in view of McCormick et al. (US 2002/0083260, "McCormick").

Regarding claim 1, Erami discloses a system, comprising:

- a control processor (a processor, not shown, in fig.2) to execute a control portion of link management (LMP Controlling Unit, see 19 fig.2);

- a line processor (a processor, not shown, in fig.2) to execute an offload portion of link management (a plurality of units, see fig.2); and

- a communications port (ports, see 11 & 14 fig.2 and ¶.14) to allow the system to access a high-capacity communications link (backbone network, see fig.1 and ¶.4).

Erami does not explicitly disclose the limitations of "a control card, a line card, and a backplane to allow the control card and the line card to communicate." However, McCormick discloses a plurality of dedicated line card comprising a line processor and the examiner takes an official notice that a backplane is a circuit board to connect board/line cards together to make up a complete computer or network system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include a control card as a central control card, a line card comprising a line processor for each of the plurality of units, and a backplane for communication among line cards for the functions/units in the OXC of Erami with the motivation of backplane's greater reliability and its convenience when line cards are added to or removed from the system.

Regarding claim 2, Erami discloses, "the control processor further comprising a general-purpose processor (not shown in fig.2, but inherent to have a general CPU for the control functions)."

Regarding claim 3, Minami does not explicitly disclose, "the control processor further comprising an Intel Architecture processor." However, it would have been an obvious matter of user's decision to a person of ordinary skill in the art to use one of available processors at the time of invention was made with the motivation of considering costs and reliability of a system.

Regarding claim 4, Erami discloses, "the line processor further comprising a network-enabled processor (network related units, see fig.2)."

Regarding claim 5, Minami does not explicitly disclose, "the line processor comprising an Intel IXP processor." This claim is rejected for the same reasons and motivation set forth in the rejection of claim 3.

Regarding claim 6, Erami lacks what McCormick discloses, "the line processor further comprising at least one reduced instruction set micro-engine (fig.1)." This claim is rejected for the same reasons and motivation set forth for line card processor in the rejection of claim 1.

Regarding claim 7, Erami does not explicitly disclose, "the backplane further comprising a physical backplane connection." However, this claim is rejected for the

same reasons and motivation set forth for the physical backplane in the rejection of claim 1.

Regarding claim 8, Erami discloses, "the backplane further comprising a network (fig.1)."

Regarding claim 9, Erami discloses a method of managing links in network, comprising:

- receiving traffic link data (data channels, see fig.2) about aggregation of data links into channels (channels, see fig.2; fig.3; and ¶.56) from a control unit (one of control units/functions, see 18-21 fig.2);
- exchanging control link status messages with adjacent peers (control messages, see fig.20 and ¶.13);
- monitoring synchronization of data links in a channel (monitor failure, see fig.19 and ¶.17);
- determining if there has been a control link or data link failure (link failure, see fig.19 and ¶.17); and
- filtering and validating control packets relating to link management (Path, Resv, & Error messages, see fig.6 A-C and ¶.105-108)."

Erami does not explicitly disclose the limitation of "a control card". This claim is rejected for the same reasons and motivation set forth for a control card in the rejection of claim 1.

Regarding claim 10, Erami discloses, "further comprising identifying link configuration changes and notifying the control card (functions in the units, fig.2)."

Regarding claim 11, Erami discloses, "receiving traffic link data further comprising receiving traffic engineered link data in accordance with the Link Management Protocol (LMP unit, see 19 fig.2)."

Regarding claim 12, Erami discloses, "exchanging control link status further comprising exchanging link status messages (fig.6 A-C)."

Regarding claim 13, Erami discloses, "monitoring synchronization of data links further comprising: detecting that a data link has lost synchronization; and notifying the control card of the loss (link failure, see fig.19 and ¶.17)."

Regarding claim 14, Erami discloses, "determining if there has been a control link or data link failure further comprising: detecting a loss of connectivity in a control channel; causing an event that notifies the control card; and setting a status flag indicating that the control channel has failed (control channel failure, see fig.4 and related paragraphs, ¶.115-119)."

Regarding claim 15, Erami discloses, "determining if there has been a control link or data link failure, further comprising: determining that a local node is not responding to data link verification message; and notifying the control card of a data link failure (Path, Resv, & PathErr messages, see ¶.105-109)."

Regarding claim 16, Erami discloses a method of establishing an offload portion of link management, comprising:

- initializing a unit (inherent to initialize a unit when power of a system is ON, see fig.2);
- registering an offload portion of a protocol to be executed by the unit with a central registration point (registration of link data using a TE protocol with link list pointer, see fig.8 and ¶.84);
- setting up a control connection with a control unit (control channel setup, see fig.3);
- transmitting resource data to the control unit (resource/bandwidth, see fig.8 and ¶.98);
- receiving configuration information from the control unit including information about data links aggregated links into channels (fig.8; ¶.89-95; and ¶.56);
- establishing connections with adjacent peers for each link (fig.3); and
- maintaining the links (fig.3 and fig.4).

Erami does not explicitly disclose the limitation of "a line card and a control card". This claim is rejected for the same reasons and motivation set forth for a line card and a control card in the rejection of claim 1.

Regarding claim 17, Erami discloses, "transmitting resource data further comprising transmitting physical link data (link list, see fig.8 and ¶.89), offload-controlled interfaces (interfaces, see fig.8, ¶.81, and ¶.91) and processing resources (resource/bandwidth, see ¶.98)."

Regarding claim 18, Erami discloses, "establishing connections further comprising exchanging link status messages (fig.6 A-C)."

Regarding claim 19, Erami discloses, "establishing connections further comprising exchanging messages to verify data links (fig.6 A-C)."

Regarding claim 20, Erami discloses, "establishing connections further comprising exchanging synchronization messages (fig.6 A-C)."

Regarding claim 21, Erami discloses, "maintaining the links further comprising: monitoring control and data links for failures (monitor failure, see fig.19 and ¶.17); identifying changes in link configurations (link failure, see fig.19 and ¶.17); and tracking synchronization in the data links (Path, Resv, & Error messages, see fig.6 A-C and ¶.105-108)."

Regarding claim 22, Erami discloses a method of establishing a control portion of link management, comprising:

- initializing a control unit (inherent to initialize a unit when power of a system is ON, see fig.2);
- registering a link management control portion to be executed by the control unit with a central registration point (registration of link data using a TE protocol with link list pointer, see fig.8 and ¶.84);
- setting up control connections (control channel setup, see fig.3) with units executing offload portions of link management (LMP unit, see 19 fig.2); and

- aggregating data links into channels (¶.56); and

- configuring the line units (fig.2) including providing aggregation information (channel aggregation, see fig.3 and ¶.56).

Regarding claim 23, Erami discloses, "comprising receiving messages from the offload portions of link management (units for control channels, see fig,2)."

Regarding claim 24, Erami discloses, "comprising updating configuration data based upon the messages (¶.94 and ¶.98)."

Regarding claim 25, it is a claim corresponding to claim 9 except the limitation of "machine-readable media". However, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to use software-based machines. The benefit using computer-readable medium is that program can be changed and upgraded new features easily.

Regarding claims 26, and 28-30, they are claims corresponding to claims 10, and 13-15, respectively and are therefore rejected for the similar reasons set forth in the rejection of the claims.

Regarding claim 27, Erami discloses, "the instructions causing the machine to exchange control link status further causing the machine to exchange HELLO messages in accordance with the Link Management Protocol (Hello message, see ¶.163)."

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung Park whose telephone number is 571-272-8565. The examiner can normally be reached on Mon-Fri during 6:15-3:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JP

Jung Park
Patent Examiner

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